

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. **(Currently Amended)** A digital headend system for communicating a plurality of video packets, a plurality of data packets, a plurality of voice packets, and a plurality of control packets, configured to be operatively coupled to a network operations center (NOC), said digital headend system comprising:

a shared bus operatively coupled to an internet processing system, a telephony processing system, and a management system, said shared bus configured to transport a plurality of data content types in ethernet format, said plurality of data content types comprising a plurality of voice data, a plurality of video data, a plurality of control data, and a plurality of internet data;

~~a buffering module configured to receive said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets;~~

a plurality of smart network interface modules (smart NIMs), each configured to receive and process said plurality of data content types;

a first re-packetization module in communication with said smart NIM buffering module, said first re-packetization module configured to combine said plurality of data content types ~~plurality of video packets~~, said ~~plurality of data packets~~, said ~~plurality of voice packets~~, and said ~~plurality of control packets~~ to generate a first re-packetization module output; [[and]]

a control computer configured to perform the real-time functions of content management and resource allocation for said first re-packetization module output content streams;

an advanced digital downstream data module configured to receive and process said plurality of content data types to a transmission format comprising quadrature amplitude modulation (QAM); and

a bi-directional signaling and control module configured to receive and process said plurality of content data types to a transmission format comprising quadrature phase shift keying (QPSK).

2. **(Cancelled)**

3. **(Currently Amended)** The digital headend system of claim [[2]] 1 wherein said ~~first buffering module~~, said ~~second buffering module~~, said ~~third buffering module~~, and said ~~fourth buffering module~~ each are plurality of smart NIMs are

configured to generate a destination address which identifies said first re-packetization module.

4. **(Cancelled)**

5. **(Currently Amended)** The digital headend system of claim 4 wherein said plurality of smart NIMs ~~first buffering module, said second buffering module, said third buffering module, and said fourth buffering module~~ each are configured to generate a destination address. ~~which identifies said second re-packetization module.~~

6. **(Currently Amended)** The digital headend system of claim 5 further comprising a plurality of second-synchronization modules ~~module~~ configured to receive ~~said second re-packetization module outputs, said~~ plurality of second synchronization modules ~~module~~ configured to generate a synchronous output ~~stream~~ streams having said plurality of data content types ~~plurality of video packets, said plurality of data packets, said plurality of voice packets and said plurality of control packets.~~

7. **(Currently Amended)** The digital headend system of claim 1 wherein each of said plurality of video data packets are moving picture experts group (MPEG) [[MPEG]] transport stream packets.

8. **(Currently Amended)** The digital headend system of claim 7 wherein each of said plurality of internet data packets are MPEG transport stream packets.
9. **(Currently Amended)** The digital headend system of claim 8 wherein each of said plurality of voice data packets are MPEG transport stream packets.
10. **(Currently Amended)** The digital headend system of claim 1 wherein each said ~~first~~ synchronous output stream occupies one channel.
11. **(Currently Amended)** A digital headend system for communicating a plurality of voice packets, a plurality of video packets, a plurality of data packets, and a plurality of control packets, comprising:

a buffering module configured to receive and process said plurality of voice packets, said plurality of video packets, said plurality of data packets, and said plurality of control packets in a first packet format;

a first re-packetization module in communication with said buffering module, said first re-packetization module configured to combine said plurality of voice packets, said plurality of video packets, said plurality of data packets, and said plurality of control packets to generate a first re-packetization module output in a second packet format; [[and]]

a shared bus configured to provide a platform for quality of service and data flow monitoring of said combined plurality of voice packets, said plurality of video packets, said plurality of data packets, and said plurality of control packets in said second packet format;

a bi-directional signaling and control module in communication with said buffering module and said first re-packetization module, bi-directional signaling and control module configured to receive said first re-packetization output and generate a second output in a third packet format;

a ~~first~~ synchronizing module configured to receive said second ~~first re-~~ packetization output and configured to generate a ~~first~~ synchronous output stream having said plurality of voice packets, said plurality of video packets, said plurality of data packets, and said plurality of control packets.

12. **(Currently Amended)** The digital headend system of claim 11 wherein said buffering module further comprises:

a first buffering module configured to receive a first plurality of video packets;

a second buffering module configured to receive a first plurality of data packets; [[and]]

a third buffering module configured to receive a first plurality of control packets[.]; and

a fourth buffering module configured to receive a first plurality of voice packets.

13. **(Currently Amended)** The digital headend system of claim 12 wherein said first buffering module, said second buffering module, [[and]] said third buffering module, and said fourth buffering module each are configured to generate a destination address which identifies said first re-packetization module.

14. **(Cancelled)**

15. **(Currently Amended)** The digital headend system of claim 14 wherein ~~said first buffering module, said second buffering module, and said third buffering module each are~~ said first re-packetization module is configured to generate a destination address which identifies said bi-directional signaling and control ~~second re-packetization module.~~

16. **(Cancelled)**

17. **(Currently Amended)** The digital headend system of claim 11 wherein each of said plurality of video packets are moving picture experts group (MPEG) ~~[[MPEG]]~~ transport stream packets.

18. **(Currently Amended)** The digital headend system of claim ~~[[17]]~~ 11 wherein each of said plurality of data packets are MPEG transport stream packets.

19. **(Currently Amended)** The digital headend system of claim 11 wherein ~~said synchronization module is a programmable logic module having a memory module.~~ each of said plurality of voice packets are MPEG transport stream packets

20. **(Currently Amended)** The digital headend system of claim 11 wherein said ~~first~~ synchronous output stream occupies one channel.

21-30. **(Cancelled)**

31. **(Currently Amended)** A method for communicating a plurality of data packet types comprising a plurality of video packets, a plurality of data packets, a plurality of voice packets, and a plurality of control packets, said method for communicating a plurality of data packet types comprising:

receiving said plurality of data packet types ~~video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets~~ in a first packet format;

communicating said plurality of data packet types ~~video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets~~ across a shared bus in a second packet format; [[and]]

processing said plurality of data packet types ~~video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets~~ communicated across said shared bus to occupy one communications channel~~[[.]]~~ ;

regulating said plurality of data packet types on said shared bus
configured to provide a platform for quality of service and data flow monitoring;
and

forming said plurality of data packet types into a third packet format to be
transmitted to a subscriber.

32. **(Currently Amended)** The method of claim 31 further comprising
generating a synchronous output stream for said plurality of data packet types
~~video packets, said plurality of data packets, said plurality of voice packets, and~~
~~said plurality of control packets.~~

33. **(Currently Amended)** The method of claim 31 wherein said receiving said
plurality of data packet types ~~video packets, said plurality of data packets, said~~
~~plurality of voice packets, and said plurality of control packets,~~ further comprises:

buffering said plurality of data packet types ~~video packets, said plurality of~~
~~data packets, said plurality of voice packets, and said plurality of control packets;~~
and

identifying a re-packetization module to communicate said plurality of data
packet types ~~video packets, said plurality of data packets, said plurality of voice~~
~~packets, and said plurality of control packets.~~

34. **(Currently Amended)** The method of claim 31 wherein said processing said plurality of data packet types ~~video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets,~~ further comprises:

combining said plurality of data packet types ~~video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control~~ packets in a re-packetization module to generate a re-packetization output; and

generating a synchronous output stream from said ~~first~~ re-packetization output.

35-45. **(Cancelled)**

46. **(New)** The method of claim 31 wherein said first packet format comprises an internet protocol packet.

47. **(New)** The method of claim 31 wherein said second packet format comprises an ethernet packet.

48. **(New)** The method of claim 31 wherein said third packet format comprises a moving pictures expert group (MPEG) packet, a quadrature amplitude modulation (QAM) packet, a quadrature phase shift keying packet, or any combination thereof.